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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,232	02/06/2004	Wu Qing	9896-000022	8166
27572 7590 11/02/2007 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER SHAW, PELING ANDY	
			ART UNIT 2144	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/774,232

Applicant(s)

QING ET AL.

Examiner

Peling A. Shaw

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This application has been examined. Claims 1-12 are presented for examination.

Priority

2. This application has claimed a priority # CHINA 03106929.0 on 02/26/2003. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. The filing date is 02/06/2004.

Claim Rejections - 35 USC § 112, second paragraph

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph as following:

- a. Claim 1 recites the limitation of “the network service control layer” in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, this limitation is read as “network service control layer” in consistent with line 2 in claim 3.
- b. Claim 1 recites the limitation of “the addresses of the calling subscriber and the called subscriber and QoS requirement for the service through analyzing the service request” in lines 3-5. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, this limitation is read as “calling subscriber address, called subscriber address and QoS requirement for a service through analyzing a service request” in consistent with paragraphs 29-30 of applicant’s specification.

- c. Claim 1 recites the limitations of “an IP access network” in line 2, “corresponding access network” in line 6, “said access network” in line 7, “the access network” in lines 11 and 15, and “access network” in line 16. It is not clear on which “access network” is related the other “access network”. For the purpose of applying art, the limitations are read as in referring to the first reference of “access network”, i.e. “an IP access network”. Applicant is advised to revise these limitations to clearly identify each reference of “access network”.
- d. Claim 1 recites the limitations of “the edge router” in line 7 and “said edge router” in lines 12 and 16. There is insufficient antecedent basis for these limitations in the claim. For the purpose of applying art, the limitation of “the edger router” is read as “an edge router”.
- e. Claim 1 recites the limitation of “the current resource condition” in lines 8-9. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “current resource condition”.
- f. Claim 1 recites the limitation of “the subscriber” in lines 9-10. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation of “the subscriber” is read as “the calling subscriber”.
- g. Claim 2 recites the limitation of “the service levels” in line 2. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “service levels”.

- h. Claim 2 recites the limitation of “the received service streams” in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “the received traffic streams”.
- i. Claim 2 recites the limitation of “the identified results” in line 4. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “accordingly”.
- j. Claim 4 recites the limitation of “the step of” in line 1. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “a step of”.
- k. Claim 5 recites the limitation of “the parameters” in line 4. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “parameters”.
- l. Claim 5 recites the limitation of “the subscriber” in line 6. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “the calling subscriber”.
- m. Claim 5 recites the limitation of “the service streams” in lines 7-8. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “the traffic streams”.
- n. Claim 5 recites the limitation of “processing the other service streams as traffic streams without guaranteed QoS” in lines 8-9. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read in light of claim 8 language.

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- o. Claim 6 recites the limitation of “wherein the step of forwarding the matched service streams by end devices” in line 2. There is insufficient antecedent basis for this limitation in claims 1 and 5. For the purpose of applying art, the limitation is read as “wherein the step c further comprise: ”
- p. Claim 6 recites the limitation of “the service streams” in line 2. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “the traffic streams”.
- q. Claim 8 recites the limitation of “the end devices” in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “the end device”.
- r. Claim 8 recites the limitation of “the subscriber” in line 4. There is insufficient antecedent basis for this limitation in the claim. For the purpose of applying art, the limitation is read as “the calling subscriber”.
- s. Through out current claim language, the limitation of “traffic streams” and “service streams” are used. Examiner has read all references to “service streams” as “traffic streams”. Further the traffic streams may be referred as “upward traffic streams” or “downward traffic streams”. Examiner will read “traffic streams” as either one of them as it is proper within the context of surrounding claim language. However, applicant is advised to explicitly identify each reference of “streams” as “upward traffic streams”, “downward traffic streams” or both.
- t. Claim 9 recites the limitations of “the network devices” in line 1, “said access network end devices” in line 2 and “the priorities of the traffic streams” in lines 3-4.

There are insufficient antecedent basis for these limitations in the claim. For the purpose of applying art, the limitations are read as “said access network end device” and “the priority for this service” in consistent with claim 1 language.

- u. Claim 10 recites the limitations of “the subscriber” in lines 1-2, “the access network end devices” in line 3 and “the command parameters” lines 4-5. There are insufficient antecedent basis for these limitations in the claim. For the purpose of applying art, the limitation is read as “the calling subscriber” and “parameters of said command”.
- v. Claim 11 recites the limitations of “the subscriber” in lines 1-2, “the access network end devices” in line 3 and “the command parameters” lines 4-5. There are insufficient antecedent basis for these limitations in the claim. For the purpose of applying art, the limitation is read as “the calling subscriber” and “parameters of said command”.
- w. Claim 12 recites the limitations of “the subscriber” in lines 1-2, “the access network end devices” in line 3 and “the command parameters” lines 4-5. There are insufficient antecedent basis for these limitations in the claim. For the purpose of applying art, the limitation is read as “the calling subscriber” and “parameters of said command”.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 20040165592 A1), hereinafter referred as Chen in view of Silverman (US 6731649 B1), hereinafter referred as Silverman.

- a. Regarding claim 1, Chen shows (claim 1) a method for providing services with guaranteed Quality of Service (QoS) in an IP access network (paragraph 3: guarantee application specific IP QoS via the combination of ATM switched virtual connections (SVCs) and permanent virtual connection (PVCs)), comprising: a. a service entity (paragraph 31: connection server 25) at the network service control layer obtaining the addresses of the calling subscriber and the called subscriber (paragraphs 40-41 and 43: routing packet, policy routing instruction includes source IP network address and destination IP network address) and QoS requirement for the service through analyzing the service request (paragraph 94: setup message carriers QoS parameter, signaling message includes QoS requirement), then applying for network resources to corresponding access network (paragraph 35: connection server 25 determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth); b. the edge router (paragraph 97: ATM switch) of said access network

judging whether enough resources can be provided for this service according to the current resource condition, if so, executing step c, otherwise rejecting the service request of the subscriber (paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor; paragraph 35: connection server 25 determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth; paragraph 100: check whether there are enough network resources to accommodate this connection; checks fail, a standard release message is returned); and c. if there are upward traffic streams of the access network in this service, said edge router informing an access network end device of the QoS requirement for the service (paragraphs 94-95: signaling includes QoS requirement, SETUP message to ATM switch; paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor), the access network end device processing said traffic streams according to the QoS requirement (paragraph 39: traffic packets are transmitted from the source subscriber 10 over QoS connection; paragraph 106: policy imposed on each connection based on the traffic descriptor). Chen does not explicitly show (paragraph 43) if there are downward traffic streams of the access network in this service, said edge router setting priority in access network for this service and forwarding said traffic streams. However Chen does show (paragraph 43) traffic packet priority information carried in IP header; (paragraph 5) a DSL subscriber connected to ATM through point-to-point protocol over Ethernet (PPPoE); (paragraph 47) ATU-R 12 may functions like an Ethernet bridge with additional

packet mapping capabilities and the switching is based on MAC addresses and mapping rules for outgoing PVC with QoS.

- b. Silverman shows (column 7, lines 11-14) tagging ToS with high priority when going through IP network; and (column 10, line 65-column 11, line 4) Gigabit Ethernet switches and Terabit routes use 802.1p&q, ToS and UDP port number to mark and identify packet priority in an analogous art of ATM edge node switching equipment utilized IP-VPN function.
- c. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Chen's functions of interfacing ATM switch with source subscriber through an ATU-R in bridge mode, i.e. Ethernet connection, and DSLAM as per Figure 1 of Chen with Silverman's functions of tagging packet priority on a Gigabit Ethernet switch or Terabit route.
- d. The modification would have been obvious because one of ordinary skill in the art would have been motivated to explicitly use the packet priority tagging capability as per 802.1p&q shown by Silverman in the IP QoS connection over ATM connection as per Chen (Fig. 1) and Silverman (column 1, lines 39-51)'s teaching.
- e. Regarding claim 2, Chen shows wherein in step c, said edge router can transform the service levels into priorities in the access network for the received service streams and forward said traffic streams (paragraphs 90 and 97: levels of CAC based on service category, e.g. CBR, VBR-rt, VBR-nrt, UBR, select lowest service category and lowest bandwidth). Silverman shows wherein in step c, said edge router can classify streams first, after identifying the traffic streams, transform the identified

results into priorities in the access network and forward the traffic streams (column 7, lines 11-14: tagging ToS with high priority when going through IP network; column 10, line 65-column 11, line 4: Gigabit Ethernet switches and Terabit routes using 802.1p&q, ToS and UDP port number to mark and identify packet priority).

- f. Regarding claim 3, Chen shows wherein step c is executed after said edge router has informed the service entity at network service control layer that the access network can provide enough resources for the service and has received confirmation from the service entity (paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor; paragraph 35: connection server 25 determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth; paragraph 100: check whether there are enough network resources to accommodate this connection; checks fail, a standard release message is returned).
- g. Regarding claim 4, Chen shows further comprising the step of said edge router obtaining at least topology structure of the access network and bandwidth resources of each interface through static configuration or dynamic management protocol (Figure 1: connection server 25 sits on the edge of Internet 20; paragraphs 54 and 56: connection server manages the complex topology of any DSLAM, e.g. the total bandwidth available on a DSLAM trunk port (interface), pre-provisioned PVCs; paragraphs 40 and 43: routing packets, policy routing instruction includes protocol ID; paragraph 90: ATM switch 15 stores the following information in relation to each Extended Virtual UNI: a service-active identifier, which is set upon subscription to

the service; a VPI/VCI range, identifying the VP and the range of contiguous VCs within the VP; a maximum equivalent bandwidth and an available bandwidth; and information regarding the PVCs pre-configured in the DSLAM 14; see also paragraph 33 of applicant's specification).

- h. Regarding claim 5, Chen shows after the access network end device receives QoS requirement of the service in step c, the method further comprising: setting items of a stream classification table according to the parameters for identifying traffic streams in the QoS requirement (paragraph 37: routing tables, routing entries; paragraph 43: type of service; paragraph 90: PVC information include QoS parameters); classifying the received upward traffic streams of the subscriber (paragraphs 94-95: signaling includes QoS requirement, SETUP message to ATM switch); and managing bandwidth according to bandwidth parameters for the service streams matched with the items of the stream classification table, and processing the other service streams as traffic streams without guaranteed QoS (paragraph 39: traffic packets are transmitted from the source subscriber 10 over QoS connection; paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor).
- i. Regarding claim 6, Chen shows after wherein the step of forwarding the matched service streams by end devices is: setting the service streams with high priorities and then forwarding the traffic streams for Ethernet access (paragraph 43: traffic packet priority in IP header; paragraph 47: Ethernet bridge with packet mapping capabilities)

or IP Digital Subscriber Line Access Multiplexer (DSLAM) access (paragraph 54: priority bandwidth on the DSLAM up-link ports); and sending the traffic streams to Permanent Virtual Circuit (PVC) with guaranteed QoS for further forwarding for ATM DSLAM access (paragraph 3: guarantee application specific IP QoS via the combination of ATM switched virtual connections (SVCs) and permanent virtual connection (PVCs)).

- j. Regarding claim 7, Chen shows wherein the parameters for identifying traffic streams can be a four-element group, a five-element group or a seven-element group (paragraph 43: policy routing instruction syntax includes source IP network address, source network mask, destination IP network address, destination network mask, IP protocol ID, type of service (TOS), source port number, destination port number, gateway IP address, interface IP address, metric; see also paragraph 37 of applicant's specification).
- k. Regarding claim 8, Chen shows further comprising: before receiving QoS parameters from the edge router of the access network for upward traffic streams, the end devices processing the received traffic streams from the subscriber as service streams without guaranteed QoS (paragraph 39: traffic packets are transmitted from the source subscriber 10 over either the new QoS connection or the default route to the ISP, based upon whether or not the packet originates from an application associated with the new QoS connection).
- l. Regarding claim 9, Chen shows wherein the network devices between said access network end devices and said edge router of the access network forward the traffic

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streams according to the priorities of the traffic streams (paragraph 88: ATU-R requires policy-based routing, enabling packets to be forwarded on different VCs to conform to the SVC parameters).

- m. Regarding claim 10 dependent on claim 5, Chen shows further comprising: after the subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth), the access network end devices deleting corresponding items of the stream classification table according to the command parameters (paragraph 104: deletes the corresponding policy routing entry in the routing table).
- n. Regarding claim 11 dependent on claim 6, Chen shows further comprising: after the subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth), the access network end devices deleting corresponding items of the stream classification table according to the command parameters (paragraph 104: deletes the corresponding policy routing entry in the routing table).
- o. Regarding claim 12 dependent on claim 7, Chen shows further comprising: after the subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command (paragraph 104: sends a standard release message to

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the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth), the access network end devices deleting corresponding items of the stream classification table according to the command parameters (paragraph 104: deletes the corresponding policy routing entry in the routing table).

Together Chen and Silverman disclosed all limitations of claims 1-12. Claims 1-12 are rejected under 35 U.S.C. 103(a).

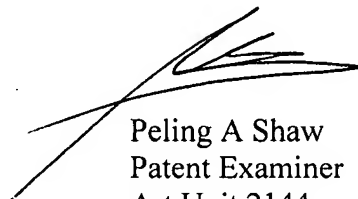
Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to the enclosed PTO-892 for details.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peling A. Shaw whose telephone number is (571) 272-7968. The examiner can normally be reached on M-F 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Peling A Shaw
Patent Examiner
Art Unit 2144

pas